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THE SCIENTIFIC AMERICAN
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(The Principal Office being at New York,)

By RUFUS PORTER.

Each number of this paper is furnished with from two to five ORIGINAL ENGRAVINGS, many of them elegant, and illustrative of NEW INVENTIONS, SCIENTIFIC PRINCIPLES, and CURIOSITIES; and contains as much Interesting Intelligence as six ordinary daily papers, consisting of notices of the progress of Mechanical and other Scientific Improvements,—American and Foreign Inventions, Catalogues of American Patents,—Scientific Essays, illustrative of the principles of the Sciences of MECHANICS, CHEMISTRY, and ARCHITECTURE;—Instruction in various Arts and Trades;—Curious Philosophical Expements;—Miscellaneous Intelligence, Poetry and, occasionally, Music.

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TERMS OF ADVERTISING.—For 10 lines, or less, 50 cents for the first, and 12 1-2 cents for every subsequent insertion.

Bachelor's Hall.

Bachelor's Hall! what a quare looking place it is!
Kape me from sich all the days of me life!
Sure but I think what a burnin' disgrace it is,
Niver at all to be gittin a wife.

See the ould Bachelor, gloomy and sad enough,
Placing his ta-kittle over the fire—
Soon it tips over—St. Patrick! he's mad enough,
(If he was present) to fight wid the Squire.

Now, like a hog in a mortar-bed wallowing
Awkward enough, see him knading his dough;
Troth! if the bread he could ate without swallowing,
How it would favor his palate you know!

His dish-cloth is missing, the pigs are devouring it;
In the pursuit he has battered his shin;
A plate wanted washing—grimalkin was scouring it;
Thunder and Turf! what a pickle he's in.

Pots, dishes, pans and such grasy commodities—
Ashes and prata skins kiver the floor;
His cup-board's a store-house of comical oddities,
Things that had never been neighbor's before.

His meal being over the table's left setting, so
Dishes take care of yourselves if you can!
But hunger returns, then he's fuming and fretting so;
Och! let him alone for a baste of a man.

Late in the night then he goes to bed shiverin';
Niver a bit is the bed made at all,
He crapes like a tarrapin under the kiverin—
Bad luck to the pictur' of Bachelor's Hall.

Paddy's Reflections.

Och! and by thunder, I shall have to knock under,
For slanthering Rory O'More.
Its murther there crying! and there's no denying,
For I've slanthered others before.

I made my confession, for that base transgression
In slanthering lymph Sal-ad-or;
Now what can I say, for the very next day,
I slanthered Rory O'More.

For old fools without hair not a fig did I care,
With Coral I'd shaved them before.
It was not worth a baubee, but now I must flee,
Or hang for Rory O'More.

I am left without hope, with prospect of rope,
Glaring and dawning before.
Italian and Coral, led on to the quarrel,
And murther of Rory O'More.

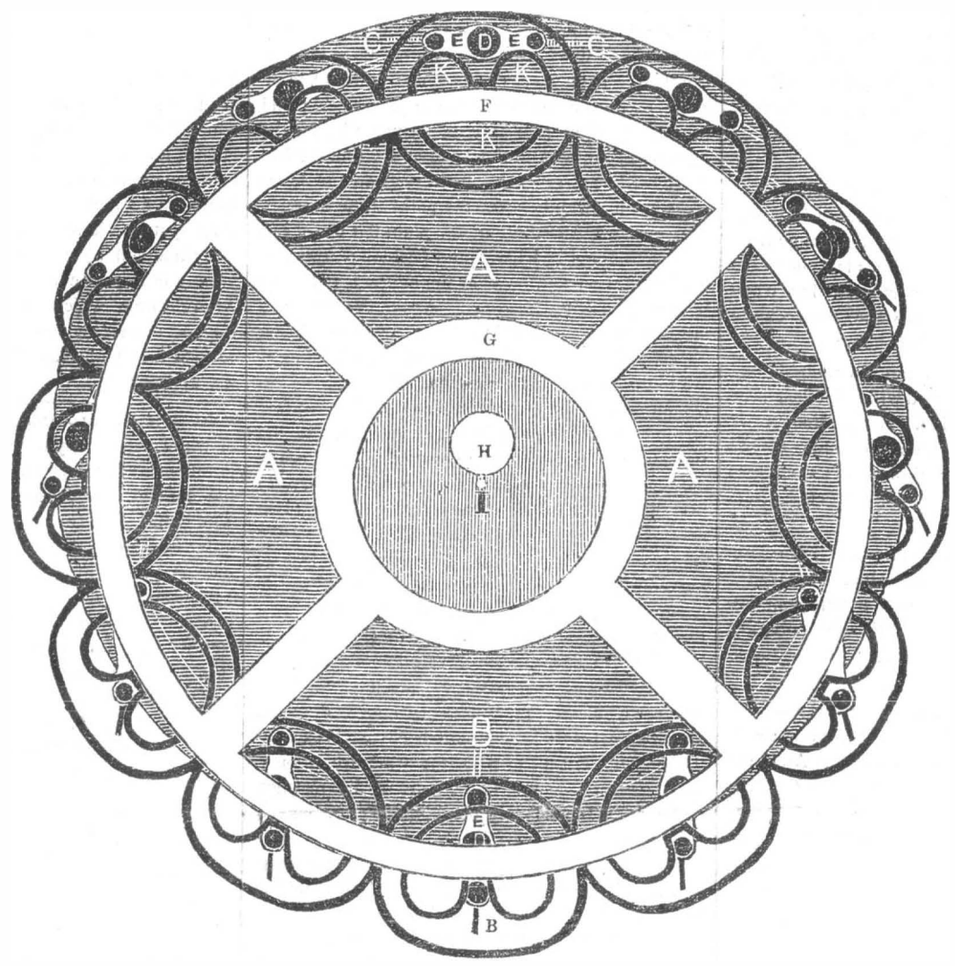
The priest says, Paddy be aisy, or in troth ye'll be crazy.
For yer diseased both behind and before.
And yer mind is as hazy, and yer lies are as grasey,
Ye scamp, now ye'll dangle for Rory O'More.

That such stuff I should choose, to make people que's
Ought to have hung me before.
But I'm caught up at last, with my lies sticking fast,
And the murther of Rory O'More.

Baby Talk.

Where *is* the baby? Bess its heart—
Where is muzzer's darling boy?
Does it hold its ittle hands apart,
The dearest, bessen toy?
And so it does; and will its ittle chin
Grow just as fat as butter?
And will it poke its little fingers in
Its tunninittle mouth, and mutter
Nicey wicey words,
Just like ittle yaller birds?
And so it will; and so it may,
No matter what its pappy, mammy say.
And does it wink its little eyeses,
When its mad and ups and crieses?
And does it squall like chick-a-dees
At every thing it sees?
Well it does? Why not, I pray?
Aint it muzzer's darlin' *evey* day?
Oh! what's the matter? oh my! oh my!
What makes my sweetest itty chicky ky?
Oh nassy, uggy pin, to prick it?
Its darlin muzzer's darlin cricket?
There! there! she's thrown it in
The fire! the kuel, wicked pin!
There! hush my honey; go to seep,
Rocked in e kadle of e deep!

DESHON'S PROPELLING WHEEL.



EXPLANATION.—This engraving shews a sectional view, in which the peculiarities of the construction are shown, though, being concealed by a disc-plate, they do not appear in a view of the wheel itself. The main wheel is represented by the tinted disc, A A A, and has a series of paddles (B B, & C C, the ends only appearing in the view) are mounted on the central pivot, D, near the periphery of the wheel. To each of the pivots is attached a yoke E E, and from both ends of each yoke, a round arm or horn projects in the direction parallel to that of the pivot. Another wheel, F G, somewhat larger in diameter than the paddle wheel, is mounted on an eccentric centre, I, the centre of which is below that of the paddle wheel; and to this circle are attached a series of heart-shaped cams, K K, &c. Surrounding each cam, and about two inches distant, is a guard which restrains the horns, which play in the space between the cam and the guard. (These cams and guards are represented in open work in this drawing, the better to represent the several parts; but in the model the cams are solid, as also the space between the guards; and the whole is covered and connected by a disc-plate, so that the spaces between the cams and the guards, are merely grooves in the side of a solid eccentric wheel.) By an attentive examination of the position of the paddles, yokes, and horns, relative to those of the eccentric wheel and cams, it will be seen that the position of each paddle is arbitrarily governed in every stage of its progress round the axle of the wheel; and that each paddle is made to perform one revolution on its own axles during two revolutions round the wheel, presenting alternately its opposite sides or faces to the resisting fluid. The wheel, when prepared for operation, is enclosed in a box or casing, except so much of it as is intended to dip in the water.

REMARKS.—This paddle-wheel has been by some, termed a submerged wheel, because it is calculated to work through the bottom of a vessel instead of being placed on the side: but in either case, the arrangements of the paddles is such that they will apply to the water more advantageously than those of the ordinary wheels. There appears to have been unusual excitement of admiration of this invention; at least it has been much praised by the public journals. It is indeed a novel and ingenious invention, and any one conversant with this subject, may readily judge of its utility by its construction. This propeller was invented by Mr. Daniel Deshon, 2d, of New London, Ct., who has secured the patent for the United States, and has taken measures for securing the same in Europe.

A NEW FLOWER GARDEN IN PARIS.—A late letter from the gay capital of France contributed to the columns of an exchange journal has the following information:—The fashionables of Paris have been thrown into an exstacy of delight by the opening of a flower-garden on a new plan in the Champs Elysees. It is called *Le Gardin d'Hiver* (the Winter Garden) and is a veritable Floral palace. A perpetual summer reigns under its vast glass roof, with an atmosphere as fragrant as the spicy vales of the Indies. Here is found the treasures of all seasons and all climates—the most modest, the most superb plants—flowers of the mountains, and flowers of the valley. Beautiful promenades are laid out, bordered with trees and fringed with evergreens. After threading the petty labyrinths of the garden you enter the saloon, carpeted with green and furnished with ottomans, where the flowers are arranged with such exquisite elegance and art as only the hands of a Parisienne can arrange these delicate creations. The court in front of the garden is always filled with the carriages of those rich votaries of pleasure, who come here to select from two hundred thousand plants, the most beautiful flowers with which to decorate their persons for the ball or the opera, and, as a matter of course, drawing all the dandies and idle fashionables of the capital to this enchanting retreat, so that the proprietor is likely to reap a golden harves from his happy thought as a Winter Flower Garden.

CAPTAIN FREMONT.—Extract of a letter just received in Washington, from Jalapa, March 27, 1846:—Letters from Mazatlan of the 4th instant state that Capt. Fremont, with his corps of observation, arrived at Sutter Settlement, on the Sacramento, early in January. He is said to have discovered a good wagon road to Oregon, which is much shorter than any heretofore travelled. He had gone to Monterey, in Upper California, leaving his corps on the Sacramento.

SIENNA MODE OF PETRIFYING.—It is said that a process for petrifying animal substances is practiced with great success in Sienna. It consists in the immersion of the substance to be hardened, for a long time in a solution of twelve parts of bichloret of mercury, and one or two parts of hydrochloret of ammonia. The natural color of the object is preserved, which is not done by other processes.

DANGER OF USING A "DICTIONARY WORD."—John, said a master-tanner in South Durham, the other day, to one of his men,—bring in some fuel. John walked off, revolving the word in his mind, and returned with a pitchfork! I don't want that, said the wondering tanner: I want fuel, John. Beg your pardon, replied the man, I thought you wanted something to turn over skins. And off he went again, not a whit the wiser, but ashamed to confess his ignorance. Much meditating, (as Lord Brougham would say,) he next pitched upon the besom, shouldering which, he returned to the counting-house. His master was now in a passion. What a stupid ass you are, John, he exclaimed; I want some sticks and shavings to light a fire. O-h-h-h! returned the rustic—that's what you want, is it? Why couldn't you say so at firs, master, instead of using a London dictionary word? And, wishful to show that he was not alone in his ignorance, he called a comrade to the tanner's presence, and asked him if he knew what fuel was. Aye, answered Joe, ducks an' geese, and sihe like!

AUDUBON'S QUADRUPED'S OF NORTH AMERICA.—This great work, now in course of publication, (something more than half of it is already completed,) is of great value to the naturalist, and more than of ordinary interest to general readers. It is a great national work, and should excite the pride and patriotism of all. The drawings are Audubon's, and that is praise enough to all who know his wonderful skill and genius in depicting animated nature. They are spirited and life-like beyond any thing we have ever seen; not even excepting his other work, the "Birds of America." In some of the animals—the racoon, for instance—the fur is so exquisitely wrought and transparent as to induce the belief, at first sight, that it has been stuck on, instead of being painted on a flat surface. Indeed they are all, from the fierce polar bear and huge buffalo, down to the mischievous moles and the destructive mice, exquisitely and spiritedly delineated.

DIFFERENT READINGS.—Shakspeare makes one of his characters say—

"How sweet the moonshine rests upon this bank."

The modern reading is thus—

"ow slick these banks do rest upon (the) moonshine."

THE MAGNETIC TELEGRAPH.—The wonders of this talking machine have not yet begun to be understood, and the extent of its availability can be scarcely imagined. What we will be able to do with it twenty years hence who can conceive? We can easily suppose that a fond husband, at Philadelphia, might hold quite a domestic colloquy with his wife at New York: such as—

"Dear Mary, I'll be home in the 5 o'clock line: have some corn-beef and cabbage for dinner, and don't forget some hot whiskey punch, for I've got a bad cold."

To which in a few moments the devoted wife answers—

"Dear Charles, tie an extra handkerchief round your neck; the beef is in the pot, and the cabbage is all ready; I've got no whiskey, and somebody has stolen my purse and all my money."

"That's just like your careless way; ask Mrs. Jones to lend you a dollar until I come—but stop, never mind; I've just given Mr. Vail two dollars for you, and he'll tell the telegraph man at the end of the line to pay it to you. Good bye."

SHORT ACQUAINTANCE.—At a late ball in Baltimore, a gentleman having danced with a young lady whose attractions, both personal and conversational, seemed to have made an impression on his sensibilities, asked, on leading her to a seat, if he might have the pleasure of seeing her on the following day? "Why no, sir," replied the fair one, "I shall be engaged to-morrow evening, but I'll tell you when you can see me." "I shall be most happy," exclaimed the stricken swain. "Well, on Saturday night," resumed the lady, "you can see me at the foot of Marsh's Market, selling cabbages." If the young man is wise he'll be there certain, for that girl will make him an excellent wife.

A WORD TO THE RICH.—Sir Robert Peel, in his great speech on the Corn Laws, asserts the very close connection between the comforts of the great body of the people, and their morals. The converse is equally true, that destitution is the fruitful parent of crime. But crime is, in some shape, always a tax on property. Is it not, then, the policy of the rich to prevent crime by preventing destitution? And what so good way is there of preventing destitution as by providing employment?

Glossary of Mechanical Terms.

(Concluded from No. 33.)

RABBIT OR RAP-IT—The strong wooden spring, against which the forge hammer strikes on its ascent.

RACE—The canal along which the water is conveyed to and from a water-wheel.

RACK—A straight bar which has teeth similar to those on a tooth wheel.

RADII—The plural of radius.

RADIUS—The semi-diameter of a circle; the arm or spoke of a wheel.

RASP—A species of file, on which the cutting prominences are distinct, being raised by a point instead of an edge.

RASURE—The act of scraping.

RATCH—A bar containing teeth into which the pall drops to prevent machine running back.

RATCHET-WHEEL—A wheel having teeth similar to those of a ratch.

RECIPROCATING—Acting alternately.

RECTILINEAR OR RECTILINEAL—Consisting of right lines.

REED—Part of a loom, resembling a comb, for dividing the warp.

REGULATOR—A small lever, in watch-work, which by being moved, increases or decreases the amount of the balance spring that is allowed to act.

REEL—A frame on which yarn may be wound.

REELING—The act of winding yarn on a reel.

RESOLUTION OF FORCES—*Vide* "Of the Action of Forces."

RESERVOIR—A large basin or conversatory of water.

REVERBERATORY—Beating back.

REVERBERATORY-FURNACE—A furnace used in the iron and copper manufactures.

RIVIT—To form a head by the percussion of a hammer; to prevent a piece of metal which has been passed through an orifice; to connect things together, from returning.

ROLLER-GIN—A machine to divest cotton of the husk, and other superfluous parts, previous to the commencement of the manufacture.

ROTARY—revolving.

Rowans—Cotton in that part of the manufacture before it goes to the roving frame.

RUBBER—A heavy file used for coarse work.

RUBBLE—A mode of building: *Vide* Masonry.

RYND—The piece of iron that goes across the hole in an upper mill-stone.

SAFETY-VALVE—A valve which fits on the boiler of a steam-engine to guard against accidents by the steam obtaining too high a pressure.

SAW-GIN—A machine on the principal of the roller-gin.

SCANTLING—The length, breadth, and thickness of any solid body taken lineally.

SCAPEMENT—*Vide* ESCAPEMENT.

SCOTCHING—The operation of packing hemp before it goes to the market.

WEATHERING—The angle at which the sails of a wind-mill are set, to receive the impulse of the wind.

WEDGE—An angularly shaped piece of wood or metal: one of the mechanical powers.

WEFT—*Vide* WOOF.

WEIGHT—The measure of the amount of the attraction of gravitation in any body compared with that of other bodies.

WELDING—The property of a conjunction possessed by some metals at high temperatures.

WHEEL AND AXIS—One of the mechanical powers.

WHEEL-RACE—The place in which a water-wheel is fixed.

WHIP—To bind two rods together with small twine: the length of the sail of a wind-mill measured from the axis.

WHIRL—A rotary motion with a decreasing speed.

WINCH—The lever or handle to which force is applied in machines turned by manual labor.

WIPER—An eccentric.

WIRE-DRAW—To reduce any longitudinal body exceedingly in the transverse section: rapid passage of a fluid through a conical orifice.

WOOF—Those portions of thread or yarn in cloth, which lie across the length of the warp.

WREST OR WRIST—The partitions which determine the form of the bucket in an over-shot wheel: the start or shoulder.

YARN—The combination of fibrous materials into a linear form by torsion.

CLEANING GLASS.—The French mode of cleaning fine glass utensils, &c., gives them great brilliancy. It is done by finely powdering indigo, and dipping into it a moistened linen rag, with which the glass must be smeared, and wiped off with a perfectly dry cloth. As a substitute for this, fine sifted ashes, applied by a rag dipped in spirits, will also answer very well; but Spanish white is apt to roughten and injure the glass.

EAST BOSTON.—The Times states that nine years ago the city tax-gatherer went through East Boston with *seven* tax-bills; eight years ago he collected *eighty* tax-bills. Last year the number was about *twelve hundred*, and we learn that the present year there are upwards of *three thousand*.

BUNYAN AND THE QUAKER.—Bunyan had a natural turn to wit and repartee, which appears in the following story: Towards the close of his imprisonment a Quaker called upon him, probably hoping to make a convert of the author of "The Pilgrim." He thus addressed him: Friend John, I am come to thee with a message from the Lord; and after having searched for thee in all the prisons of England, I have found thee at last. If the Lord had sent thee, returned Bunyan, sarcastically, "you need not have taken so much pains to find me, for the Lord knows I have been a prisoner in Bedford jail these last twelve years.

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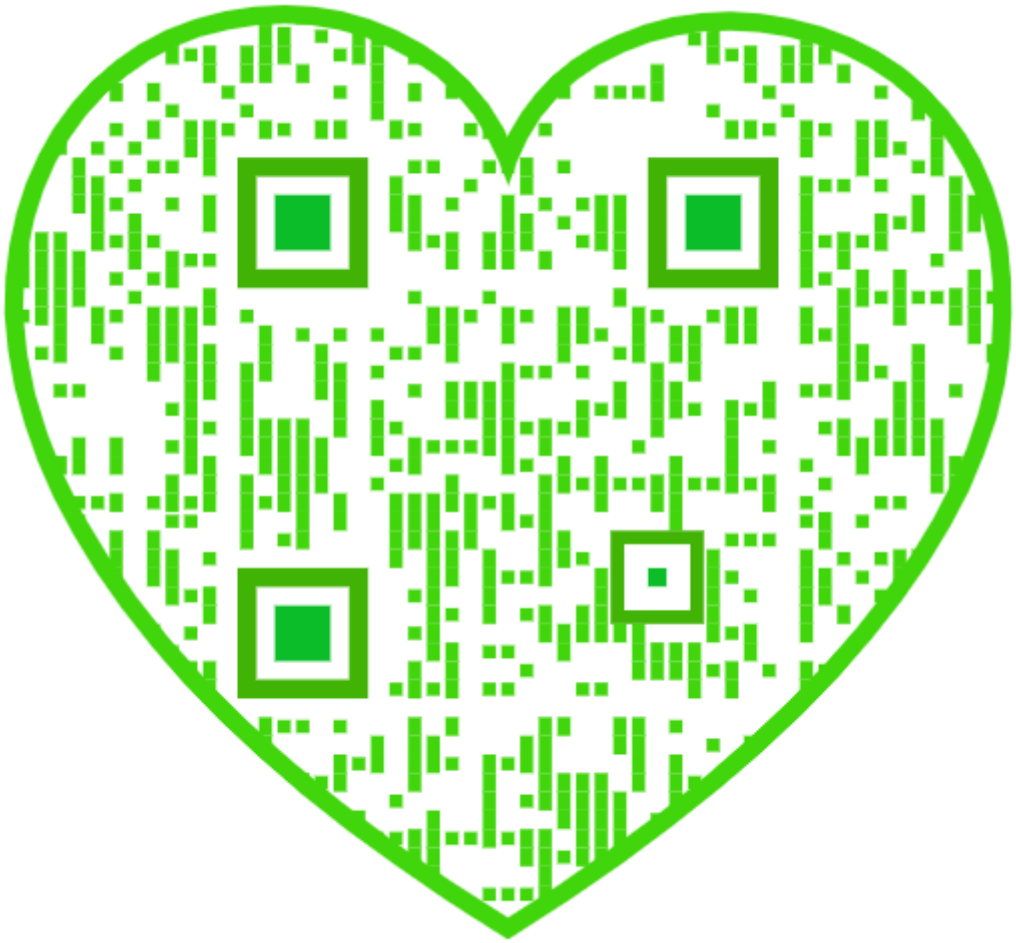
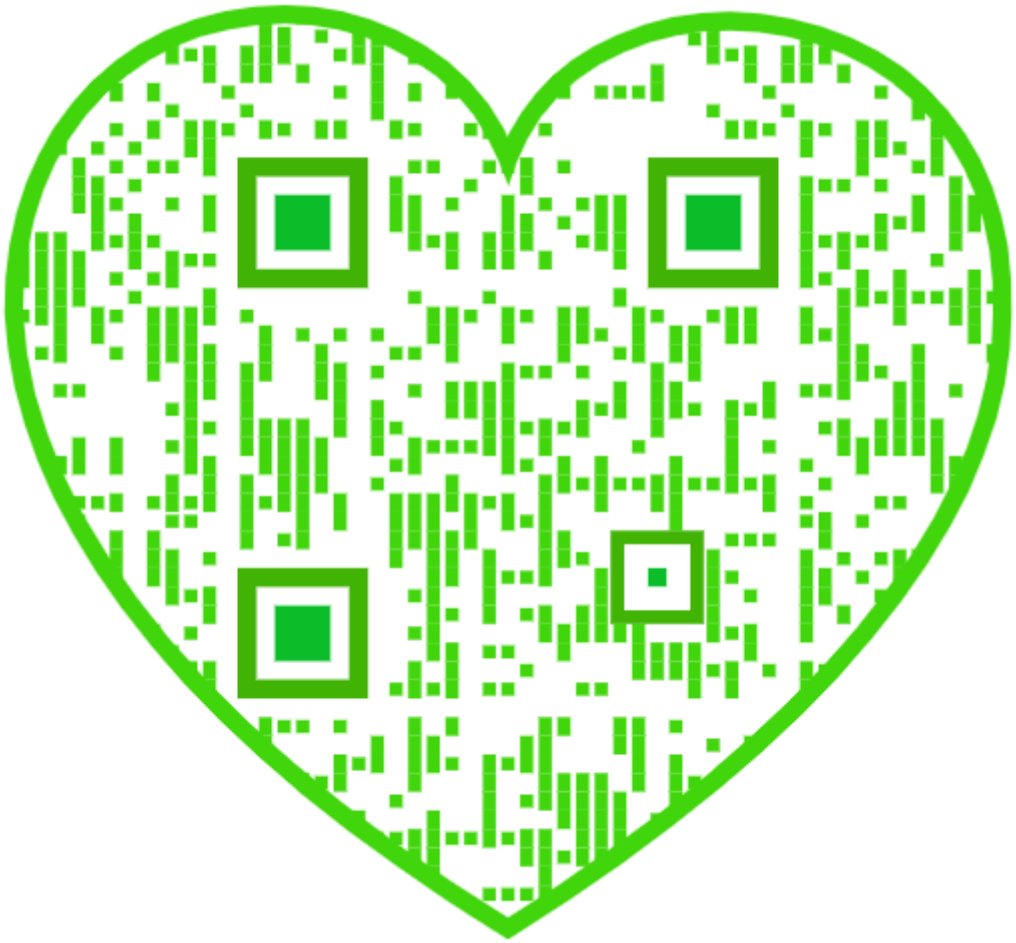




SCIENTIFIC AMERICAN

NEW-YORK, THURSDAY, MAY 7.

In Self-defence,—we would again notify our patrons, who receive their papers of local agents, that if the paper is not duly furnished, they may attribute the circumstance to the delinquency of the agent in his payments. We must stop the paper from one or more of them next week, unless they pay up.

To Correspondents.—The poetry by the "Vermont Apprentice," is not all passable, and what is passable is not original. That by M. B. P. will appear in our next.

T. L. is informed that the price of Davis's small batteries is $2 each.

The description of a new steam engine by B. B. L. is received, and approved; and will be inserted with illustrations as soon as convenient.

Science of Mechanics.

(Continued from No. 33.)

Caloric and its uses.—Both light and heat are capable of reflection and refraction. If the rays of the sun or of a lamp flame, fall on a concave mirror, both the light and heat are reflected back converging to a focus: and in this focus is found a condensation of both light and heat. When the rays which emanate from the sun or from a lamp, are converged by the refraction of a convex lens, so as to produce an image of the luminary on the surface of an opaque body, the increased density of heat is found to correspond to that of the light. These rays may be condensed by passing through a lens made of ice, and will still retain their heat, so as to produce the ignition of light combustibles. In this way, by a double convex cake of ice, the rays of heat emanating from a heated plate of iron, even when it is not sufficiently hot to be luminous, may be so condensed as to be sensibly felt by the hand placed in the focus. There is evidently an abundance of caloric in the common elements, and which might be had at a cheap rate, could we but find a cheap and ready method of liberating it from its latent state; and the time may yet arrive, in which *water* will be found to be the cheapest fuel, and be made to furnish both heat and light. Could a method be found of reducing the *oxygen* to the gaseous state, as readily as we now do the hydrogen, these components would be extensively used for the production of light, if not for heating rooms. We have heretofore introduced the subject of the practicability of producing heat on a large scale by compression; which subject we shall resume in our next, or a future number, and endeavor to illustrate the practicability of thus producing heat without any other expense than the ordinary wear of machinery. Steam, when under a high pressure, contains less caloric in proportion to its density, than when the pressure is light. When steam escapes freely, without restraint, it retains a temperature of 212 degrees: when it is liberated from under a pressure of 100 lbs. per square inch, its temperature will be instantly reduced to about 100 degrees: and if it be liberated from under a pressure of 300 lbs. per square inch, the temperature becomes reduced to fifty degrees or less. Being liberated from under a pressure of 1000 lbs., it will, when liberated produce frost. Atmospheric air contains a large quantity of caloric, even at the temperature of zero, and becomes very hot by being compressed. If air is suddenly compressed under a pressure of 400 lbs. per square inch, its temperature will be raised to above 400 degrees, and will readily ignite splinters of dry wood, and will itself become luminous. But if the pressure is continued for a few minutes, the caloric will have radiated, and the compressed air will become cold: if it be then suddenly liberated, it will become intensely cold, not only producing frost, but will freeze proof spirit, and even consolidate mercury. Caloric readily causes air to expand to a great extent, and it is a question yet unsettled, whether there may not be as much effective power produced from the expansive force of atmospheric air, by the application of heat, as there can be from the steam produced by an equal quantity of fuel. When heat is applied to metals, it causes them to expand, until the attraction of adhesion is destroyed, and they fall into a fluid state, and by an increase of heat, their expansion is continued until they sublimate, assume a gaseous form, and rise in vapor. The expansibility of metals by heat, has been found useful for various purposes: the temperature of bodies is indicated by the expansion and contraction of mercury in the thermometer. Ventilating windows have been made to open and close by the expansion and contraction of a brass wire, according to the temperature of the atmosphere: an alarm bell has been made to ring at a given temperature by similar means; and an attempt has been made, and may yet prove successful, for constructing a clock to be kept in constant motion, by means of the expansion and contraction of a series of brass plates, affected by the ordinary changes of the temperature of the atmosphere. All bodies, not even excepting ice, contains a large quantity of latent caloric; this is commonly called "latent heat," but we think it is *not* heat in any sense, until it is liberated and becomes palpable. It might with as much propriety be termed "latent light," as "latent heat:" but when suddenly liberated, as by explosion, both light and heat are evolved. When water is mixed with sulphuric acid, the mixture becomes more dense than either of the ingredients, and the quantity becomes in some measure reduced; and in consequence of this small reduction of quantity, a large portion of caloric is liberated, and the mixture approaches boiling heat. When a piece of metallic potassium is placed in contact with a piece of ice, a part of the ice becomes decomposed, and a quantity of caloric is liberatee therefrom, sufficient to produce flame.

(To be continued.)

Railroad Intelligence.

The Legislature of Pennsylvania has passed the bill, chartering the central Railroad from Harrisburg to Pittsburgh. Strong assurances are given by many of the capitalists of Philadelphia, that the means will be furnished when required. An act has also been passed granting the right of way to the Baltimore and Ohio railroad, but under such restrictions or provisos as to render it little better than a dead letter.

Cleveland and Pittsburg Railroad.—This route has been surveyed, and is represented by the report of the engineer to be exceedingly favorable; the highest grades being only 50 feet per mile, and the smallest curves, on 150 feet radius. The length of the route is 97 miles. This road, in connection with the Harrisburg road, will form a direct communication between Philadelphia and the Lakes.

The railroad between Sandusky and Mansfield is nearly or quite completed: the cars have been running for several days as far as Paris, a distance of 36 miles.

The agent of the Atlantic and St. Lawrence Railroad Company has succeeded in procuring the right of way from Oxford, Me., to Woodstock, on the most favorable terms. A. C. Morton, Esq., has been appointed First Superintending Engineer for the whole distance from Portland to the St. Lawrence.

The Somerville (N. J.) railroad, having passed into new and enterprising hands, will be put forward with energy. The whole distance from Elizabethtown Point to the Lehigh Coal-beds at Pottsville, is only about 100 miles,—40 miles less than that of the Bristol route by which the coal is now brought from those mines.

The New Route between New York and Boston.—The entire length of this route is described as 209 miles. The highest grades range from 46 to 55 feet per mile, and embraces less than one-eighth of the whole. It is calculated that when this road is constructed, the distance from city to city may be passed in about four hours.

The business proceeds on the Philadelphia and Reading railroad has increased within the last three years, from $7,485 to $34,153. Arrangements are now making for running trains, consisting of one hundred cars, with an interval of only ten minutes between the departure of the trains in each direction.

Framingham and Wayland, (Mass.) Branch.—The Legislature of Massachusetts has passed a bill granting a charter for this road, notwithstanding the most strenuous opposition from the Worcester Railroad Company, and all parties therein concerned or interested.

Atlantic and Mississippi Railroad.—The bill for the prosecution of the great work of a railroad from Jackson, in the direction of the Alabama line—a link in the great chain connecting the Mississippi river with the Atlantic ocean at Charleston, South Carolina—has finally passed both houses of the Mississippi Legislature, with an appropriation of the U. S. 2 per cent. fund thereto.

Another Connecticut River Railroad.—An application is to be made to the next New Hampshire Legislature, for a charter for a railroad on the east side of the Connecticut River, passing through Claremont, Charlestown, Walpole, Westmoreland, and Hinsdale, to the Massachusetts line. This route will probably pass through Winchester to Montague, on the river.

The fare on the Utica and Schenectady railroad has been reduced to two dollars.

About ninety-five railroad trains leave Boston daily, for some twenty-five different stations.

Magnetic Telegraph.

The line between Philadelphia and Baltimore is probably finished and ready for operation. The wires across the Susquehanna are sufficiently high to allow vessels to pass under. We have seen several reports of evidences having been procured from New York, and other places, by the Philadelphia lawyers, by means of the telegraph, relating to cases pending in the courts then sitting in Philadelphia: and which evidence was indispensible, and could not have been otherwise obtained in season to be available. The time may, in a few weeks arrive, when a barrister in Philadelphia may, during the progress of the trial of a case in court, subpœna a witness before a Justice of the Peace in Portland, Me., receive his deposition, and present the same to the Court in the former city, with as great facility as if the witness were present, and that without leaving his seat.

Railroad Excitement in Pittsburg.—We have predicted from the first movement on the subject, that the enterprising people of Pittsburg *would* have their *way*, and we think so still, notwithstanding the depression occasioned by the several destructive conflagrations which have occurred in that city within the past year. The persisting determination of the people is evinced in the following extract from a late Pittsburg "American:"—

"If the courts can grant the right of way for one kind of a road, they can for another, and releases can be had throughout the whole route. The road can be thus made and secured to the makers, despite the despicable dog-in-the-manger course of Philadelphia usurers, thieves, babbling bullies, and robbers. They will also be relieved from any obligation to permit their road to be tapped, and altogether clear of tax on their freight and passengers."

Don't Kill the Birds.—According to the computation of Ornithologists, a black-bird devours, on an average, fifty grubs or worms per day; and a crow, two or three times that quantity. Yet these birds are hunted and destroyed by farmers, on account of their occasional trespasses in the cornfield;—not considering that the fruit and vegetables which are preserved by the destruction of the insects, will more than four-fold compensate for the depredation of the birds. Let the birds live, and your orchards and gardens will be much better for them.

Galvanism.

Continued from No. 33.

Fig. 1.

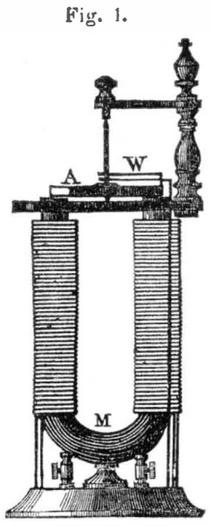
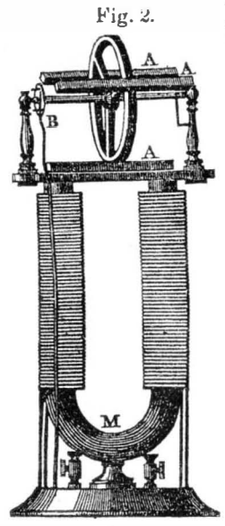


Fig. 2.



Electro Magnetic Rotaries.—There are several kinds of curious machines in use, in which a rapid rotary motion is produced, by means of an arrangement by which the galvanic circuit is broken and renewed in quick succession, in the manner which we shall proceed to describe. Figure 1, at the head of this article, represents a machine with a revolving armature, usually known as "Pages Revolving Armature." This consists of an electro-magnet, M, fixed in a vertical position upon a stand, and supports near its poles a cross-bar of brass, on one end of which is an upright post; and from this post, an arm projects horizontally, for the purpose of supporting the head of a small vertical shaft, the lower point of which rests on the brass cross-bar midway between the poles of the magnet. An armature, A consisting, of a plain flat bar of soft iron is mounted in a horizontal position on this vertical shaft, immediately over the magnet, and nearly in contact with the poles. Above the armature are two silver springs, W, which press gently on opposite sides of the shaft; one of them is connected to the wire which forms the helices of the electro-magnet, and the other passes down to the foot of the stand, and both wires are connected to the two binding cups seen at the bottom of the magnet, and thence to the poles of a galvanic battery, so that the connection of the circuit is through the two springs and the vertical shaft. That part of the shaft to which the springs, W, are applied, is filed away on two opposite sides, so that the springs do not continue in contact therewith only about half of the time; consequently the circuit connection is broken twice during each revolution of the shaft. This flat part of the shaft is called the break piece. The springs and the prominent sides of the shaft are so adjusted that the circuit becomes broken at the moment that the ends of the armature, when in motion, comes nearest to the poles of the magnet, and is again closed when the armature has passed on a little more than a quarter of a revolution in its course. The circuit being then closed, electro-magnetism is induced in the magnet, which attracts the two ends of the armature, which, on approaching the poles, being instantly relieved from magnetic influence by the breaking or disconnection of the circuit, pass on by the force of momentum till the connection is again formed through the shaft and springs, when the impulse is renewed. In this way a rotary motion of ten thousand revolutions per minute may be produced; the induction and suspension of attractive power of the magnet being repeated twice during each revolution of the armature. This mode of interrupting the galvanic current is frequently used for producing shocks, as we shall explain in due order.

Figure 2 shews a machine with horizontal revolving armatures. In this machine there are three armatures, A A A, fixed to the circumference of a vertical brass wheel and parallel to its axis. On the poles of the electro-magnet, M, is secured a brass plate with two upright posts which support the axis of the wheel. As the wheel turns, the armatures pass in succession over the poles, and very near to them. At B, on the shaft of the wheel, is the breakpiece, consisting of a small metallic disc, from which projects in a latteral direction, three pins. A silver spring connected with one end of the wire which forms the helices of the magnet, plays upon these pins; and the other end is connected to one of the binding screw cups on the base. The body of the magnet, or the brass cross-bar is connected by another wire to the other cup; and the cups are connected to a battery; thus forming a connection of the circuit through the break-piece, shaft, and upright posts. The pins of the break-piece are so arranged that the magnet will be charged when any one of the armatures is brought near it by the motion of the wheel. The approaching armature is thus attracted towards the poles: when it arrives at the plane of the magnet, the current is cut off in consequence of the separation of the corresponding pin from the spring. The armature being no longer attracted, moves on by its momentum till the next bar comes into the same position, causing the magnet to be re-charged, when being attracted in its turn, the armature passes on producing rapid rotary motion.

(To be continued)

Blind Making.—Messrs. Rand & Place of Lowell, Mass., have contracted with the several Corporations of that city, for making six thousand pairs of green window blinds; namely, for the Massachusetts 1500; Merrimack 2,004; Boot 1,000; Tremont and Suffolk corporation 1,500. Messrs. Rand & Co. have excellent water-power machinery for this business, and which turns out the blinds so fast, that six men are kept constantly employed in painting them.

New Style of Architecture.—A church has been erected in Brunswick, Me., the outside of which is finished in the *batten* style, being first covered with planks tongued and grooved, with narrow strips of boards placed vertically over the joints.

Arts and Trades.

Improvements in Blacksmithing.—Blacksmiths in general use but very few swedges of any kind; nor do they apply any other force to them, than the momentum of the hammer; notwithstanding the fact that more effect may be produced by a properly adjusted lever in a minute, than can be done with the hammer in four. We shall not deny that the percussion principle, is better in most cases for the iron, than a pressure; but when the only object is to reduce the iron to the required shape, the lever pressure is vastly more effective. The reason of this could be readily explained mathematically, but such explanation would require more space than could be afforded at this time. A crane-lever, ten or twelve feet long, to be so hung as to swing or move horizontally, is a thing of small expense, but of immense power; and this power or force may be applied to swedging heated iron to any required shape, or to punching holes through, or cutting off bars of cold iron. One end of this lever must be connected by strong hinge joints, to a permanent post or beam, and its force may be applied either horizontally or vertically, as occasion may require; but a further description thereof, with its various modes of application, must be deferred to a future number. By the use of a lever of this kind, a force of 50,000 lbs. may be readily applied to the work, by the strength of one man; and by the use of properly constructed swedges, chains, screw-bolts, various kinds of cutting and other tools, may be made with half the labor that is required when made by the hammer only. And most of the swedges required are easily made by means of the lever power; for one of the articles for the manufacture of which the swedge is intended, being made by other means, it may be readily indented in the iron which is to constitute the swedge, by pressure, although it could not be done by percussion. Should a judicious system of swedging, with cheap apparatus, be fairly adopted by smiths, it would be found that a variety of articles could be made with advantage of wrought iron, which are now made only of cast iron, or, in cases where tenacity is required, of brass or spike metal, and that without the least regard to the appearance.

Artificial Coloring of Marble.—The surface of white marble may be colored with chemical preparations that will penetrate to some depth below the surface, and consequently remain permanent. The liquid nitrate of silver produces a red color similar to the red shades often seen in variegated marble. The nitro-muriate of gold will produce a beautiful purple. A solution of verdigris, ground in vinegar, or even in water, will stain a pale green tint, which will remain permanent. A tincture of turmeric, (turmeric steeped in alcohol) may be applied with a camels-hair pencil, and will produce a beautiful deep yellow color. The tincture of indigo, or the common blue ink, added to the turmeric, will produce a deep stone green. A tincture of cochineal in alcohal, with the addition of a little allum and cream of tartar, gives a beautiful rose color, which the addition of oxy-muriate of tin, changes to a scarlet. Most of these colors penetrate into the marble to the depth of one tenth of an inch, and remain permanent. If verdigris is boiled in beeswax and applied to the marble, and scraped off when cool, it will be found to have stained an emerald color to the depth of a quarter of an inch. The colors prepared with alcohol, should generally be applied to the marble while hot. The solution of indigo in sulphuric acid, diluted with water, will represent the natural blue shades of marble. A solution of copperas being first applied, and followed with a solution of pearlash, produces the color of the natural yellow marble. By varying, diluting, and compounding these colors, and applying them skilfully, imitations of the most beautiful specimens may be made, and will remain permanent.

Steam Churches.—Now that warm weather is approaching, thousands of our citizens whose avocations require their attention six days in a week, are already anticipating the pleasure of Sunday excursions on the water, where they can be regaled with fresh air, and the relief of variety to their too closely cramped minds. Even many who are seriously disposed, and would not willingly absent themselves from their churches, are often constrained, from due regard to health, both of body and mind, to forego in some measure their devotions, for the luxury of aquatic excursions. With this consideration, we would suggest, that some person, or company, who have the means at command, would fit up a steamboat, or tow boat, convenient for accommodating public worship on board, and either employ a respectable preacher, or open the door for evangelical volunteers, and thus accommodate with the pleasure and benefit of Sunday excursions, those who would otherwise by conscientious scruples be restrained. Can there be a doubt that such an arrangement would prove a profitable concern to the proprietors? We think far otherwise; and if this plan were once introduced, we should witness crowded decks and cabins, even at such prices of fare, as would bring thousands of dollars to the pockets of the proprietors, where only hundreds are now realized by the common custom. Let some person lead the way, and a company may readily be formed, numbering five thousand members, who will pay one dollar each in advance, to aid in putting the plan in immediate execution.

Galvanic Batteries.—We have now on hand two new batteries, made on the most convenient and permanent plan, and the most powerful for electro-plating or electro-moulding, or propelling machinery, that has ever been used in this city. Each of them contains eight double pairs of large plates, in independant cells, and compactly arranged in a convenient trunk for transportation. They will be sold with connections and apparatus for $20 each. Also for sale several well made medium sized batteries for 75 cents each. Electro-plating with fine gold, jewellers gold, silver or copper is executed in the most brilliant and durable manner by an experienced artist, in a department connected with this office.

Variety

There is in the possession of a Dutch family in Albany, a parrot 82 years old. It was, formerly, noisy talkative, and very profane, but in its old age has become very grave, and probably as religious as old people in general.

A Seminole teacher has adopted the practice of chalking the letters on a black-board, and by small premiums encouraging his pupils to shoot with an arrow, such letters as he should name: thus teaching the young idea *how to shoot*.

Several new comets have been discovered by the European astronomers: one of them is seen without the aid of a glass. Seven different comets have been reported within a year.

A young lady, named Frances Reed, while viewing with others the falls near Watertown, became dizzy, and fell down the steep bank in the foaming water below, to rise no more.

Messrs Southworth and Howes, of Boston, took several daguerreotype views of the sun during the recent eclipse. The representations are said to be very perfect.

There is a prospect at present that the Tariff question may be suffered to lie over to another session of Congress. This prospect is encouraging to American manufactures.

Mr. J. B. Gough has returned to Boston from his pleasant and successful visit to Virginia. He has secured the names of several thousands, to the temperance pledge.

The Fakir of Ava, who has been reported dead, and his property distributed amongst his heirs, appears to be still alive, and playing his pranks as comical as ever.

An old hangman who resided at Limerick, Ireland, and was 85 years old, having no one else to hang, and being in want of a job, recently hung himself in the most effectual manner.

Several of the convicts in the Penitentiary of Indiana have recently professedly religious experience, and have been baptized in the Ohio river, in the presence of their fellow prisoners.

The Debtors' Prison, in Boston was entirely tenantless last week, and there were very few prisoners in the criminals' department. The rogues have probably concentrated in New York.

A deaf and dumb couple have been recently married at the Asylum in this city, by Rev. Mr. Cary. The ceremony was performed in the language of signs, and was attended by all the inmates.

There are eight silk establishments in Massachusetts, which produced, during the last year 22,509 lbs. of sewing silk, valued at $150,477. The capital invested is less than $4,000.

A new Episcopal Church, with a spire eighty feet high, constructed entirely of iron, is to be constructed at Pottsville, Pa. This material is coming into extensive use for building purposes.

A Mr. Swartz, of St. Louis, has discovered a superior kind of varnish, which is nearly perfect in transparency, dries quick, and is susceptible of an excellent polish.

Judge John Briscoe, of Van Buren, Mo., aged 70, was recently married to Miss Drake, a beautiful girl of sweet sixteen. There was probably *money* in the consideration.

Mr. Barnum of the American Museum, has recently returned from Europe, accompanied by a lady ourang-outang, whom he calls *Mlle. Jane*, and advertises as a bona fide "wild *man* of the woods."

Three bales of raw silk, the product of the State of Ohio, were lately shipped at New Orleans, on board the ship Elizabeth, for Liverpool. It ought to have been worked up in this country.

A vein of fine marble, alternating in color from the brightest to the darkest red, has been recently discovered in Hawkins Co., Tenn. The vein is said to be forty miles in length.

A farmer near Blackroot, in England, while digging in the earth, not long since, eight feet below the surface, found a bar of pure gold weighing thirty ounces, and worth about $600.

Jackson, the pedestrian, having *run* down all opposition here, has gone to England to try the speed of the bulls. He offers to run eleven miles in one hour.

A project has been broached in France for constructing a railroad tunnel under the sea, from Calais to Dover, 21 miles. Monsieur will find it a hard job.

It is estimated that the saving to the city of New York, in the single article of milk, within the year past, in consequence of increased railroad transportation facilities, is no less than $120,000.

The delegation elected to represent this city in the State Convention, consists of one doctor, *two mechanics*, three merchants, and *nine lawyers!*—What do mechanics care for their rights?

Professor Espy has constructed a huge ventilator upon the Capitol at Washington. It furnishes the orators with abundance of *wind*, and threatens to elevate them above the *things below*.

A sugar-tree—rock-maple—on the farm of Mr. W. Price, in Butler Co., Ohio, which measures four feet and four inches in diameter. This is probably the largest tree of the kind in the world.

It is said that within the seven years preceding the year 1842, ninety millions of dollars went to Europe from the United States, for the article of iron.

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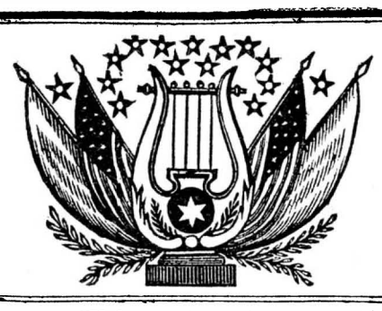


We're not to blame.

Oh pity me lady, I'm hungry and cold,
Should I all my sorrows to you now unfold
I'm sure your kind breast with compassion would flame.
My father's a drunkard, but I'm not to blame,

My mother's consumptive and soon will depart,
Her sorrows and trials have broken her heart.
My poor little sisters are starving—Oh shame !
Our father's a drunkard, but we're not to blame.

Time was we were happy in plenty and peace,
And every day saw our pleasure increase :
Oh then with what kindness we lisped forth his name,
But now he's a drunkard, and are we to blame ?

Time was when each morning around the fire side
Our sire in the midst like a saint would preside,
And kneel and for blessings would call on God's name,
But now he's a drunkard, can we be to blame ?

Our father then loved us and all was delight,
Until he partook of the withering blight,
And sunk his poor family in mis'ry and shame,
Oh yes, he's a drunkard, can we be to blame ?

Yet we must be censnred and shunn'd by mankind,
Trod down with contempt and to sorrow consigned,
Our friends all forsake us and leave us,—oh shame,
I own he's a drunkard, but we're not to blame.

My poor dying mother must *she* feel the scorn,
Must she be forsaken to perish forlorn ?
Oh grieve when I call on that much revered name ?
I must ask the world can she be to blame ?

My sisters, poor orphans, O what have they done,
Why should you neglect them, or why will you shun ;
Let not foul disgrace be attached to their name,
Their father's a drunkard but they're not to blame ?

To A Sister.

There's beauty in the evening sky
As the last tints of daylight flee,
Then fancy radiant mounts on high
To wean her thoughts of poetry.

There's beauty in the Summer flowers
And in the Autumn's mellow shades,
When crimson sunset gilds the hours
And throw sad glory o'er the glades.

There's beauty in the morning's glow,
Trembling in gold hues round the sea,
But ah ! such beauty earth ne'er knew
As lives, sweet Alexine in thee.

Thy form, thy eyes, the silver ring
Of thy gay laugh upon my ear,
Thy auburn curls which thou dost fling
In glitt'ring waves upon the air.

They come before me like a dream
Of loveliness unearthly fair,
And as I watch the hazel beam
Of those dark orbs now smiling there.

A wish that thou might'st ever be
The brilliant picture now thou art,
Is floating up to heaven for thee,
To guard from flight thy merry heart.

A prayer is o'er thee Alexine,
Oh ! may a talisman it be
That changing years no cares may bring
To mar thy happy destiny.

"Thy Will be Done."

"Come hither, George and Marian,
Come hither, Isabelle."
Thus spoke a youthful mother,
And soft her accents fell.

And George, the rosy, dark-eyed rogue,
Came bounding at her will ;
And Isabelle, the darling,
And Marian meek and still.

"Now if you each one prayed to heaven,
And ONLY one might say,
For what, my precious children,
Would you this moment pray ?"

"Oh ! I would pray that God would send
His bright heaven down to earth,
Nor take from us our loved ones !"
Said George, in thoughtless mirth.

"And I," said loving Isabelle,
"Would ask my darling mother,
That we might together die—
Thou, Marian, I and brother !"

Then Marian raised her thoughtful eyes,
Our little, dreaming nun ;
"Be this MY prayer," she murmured—
"Father, thy will be done !"

The Seasons.

In fair Spring's fresh budding hours
What adorns our garden-bowers ?
Little flowers.

When departing Spring we mourn,
What is shed from Summer's horn ?
Hay and corn.

What is Autumn's bounteous sign,
Mark of Providence divine ?
Fruit and wine.

When old Winter, hobbling slow,
Comes, what do we gain, d'ye know ?
Ice and snow.

GEN. TOM THUMB.—The General is even more popular than ever in London. At the Egyptian Hall, his exhibition averages about $500 daily. At nine o'clock P. M., his proprietor shuts up shop and proceeds to the Lyceum Theatre, where the General plays on shares, which amounts to nearly $1,200 per week—or $200 per night. A pretty good income, $700 for a day and night exhibition. At the Lyceum he plays in a piece called "Hop o' my Thumb." He will return here in the fall.

Selected Articles.

AN EDITOR'S SUB.—An editor in Indiana has a journeyman printer worth his weight in gold—a sort of a "*rara avis*," a quiz, a wit, a poet, an orator, a man who is up to every thing under the sun. In the summer, when business is dull, and news becomes scarce, our editorial friend has nothing to do but ring the bell for his journeyman. "Tom," said he, "I want a speech to-day—half a column, *done up brown*." "I'll fix it, sir," replies Tom, who proceeds forthwith to his case, and without copy or previous preparation, sets an admirable speech, purporting to have been delivered by some crack orator before the last public meeting. If necessary, Tom makes a wood cut, representing the orator in one of his happiest flights. The speech takes like wildfire, and is considered a splendid effort of genius. Occasionally Tom is called on to grace the editorial chair. "Tom, I shall be absent for a couple of weeks—keep up the steam." "Yes, sir," says Tom ; and sure enough the paper goes along like a locomotive. Sometimes Tom is requested to knock the argument of a political opponent, or a blackguard editor, into *pi*. No sooner said than done. Tom goes to his case, with dire indignation upon his brow, and sets up a perfect smasher. The offending wretch is killed to all intents and purposes. In addition to all these qualifications, Tom does all the pugilistic business of the establishment—reports the proceedings of the Legislature—duns the subscribers—keeps the books—attends the public meetings—officiates at the balls and parties; does the stump speaking of the county ; and makes himself generally useful.

THE LOVE OF FLOWERS.—There is not in the human heart a more beautiful passion than the love of flowers. It is not only beautiful, but it shows that there is something of purity and holiness within the temple where it dwells. The man, woman, or child, who loves flowers—delights to gaze upon their beauties or inhale their sweet perfume—is not all bad. This feeling ought to be cherished and made to expand by ministering to its desires. The denizens of crowded cities, shut up from the green fields and native flowers, find in a few half-dying plants. transferred from the hot-house to their windows, a poor substitute. It is, however, better than none. And the poorest tenement, as well as the mansion of the wealthy, can possess this substitute. A daisy, a primrose, or a delicate geranium will cherish and keep alive this love in the heart. Most children are fond of flowers. We have seen few that were not, and those were precocious in vice and depravity. In passing through the market, a few days since, we saw a little girl, poorly but neatly clad, before a flower-stand with her face turned towards the various flowers upon it. We stopped to watch her. After permitting her eyes to wander for a few moments over the whole collection, she fixed them upon a pretty violet. She gazed upon it intently for a little while, then gently stooped down and touched her lips to the modest flower. As she raised up her head and turned to go away, an expression of happiness and gratified love lit up her countenance. We loved that flower too for the pleasure it gave a young and innocent child.

THEORY OF MARRIAGE.—There was a merry fellow who supped at Pluto's three thousand years ago, and the conversation turning upon love and the choice of wives, he said, "that he had learnt from a very ancient tradition, that men had been originally created male and female, each individual being provided with a duplicate set of limbs, and performing his locomotive functions with a kind of rotary movement, as a wheel ; and that he became so excessively insolent that Jupiter, indignant, split him in two ; and since that time that each half runs about the world in quest of the other half; if two congenial halves meet, they are a very loving couple : otherwise they are subject to a miserable, scolding peevish, and uncongenial matrimony.—The search he said was rendered difficult, for the reason that one man alighting upon a half that did not belong to him, another did necessarily the same, till the whole affair was thrown into irrtrievable confusion.

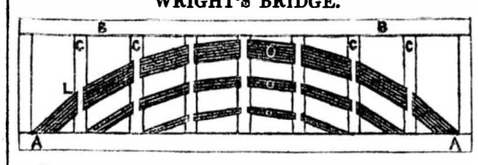
COLORS OF FLOWERS.—To find the colors that contrast, the following simple and ingenious method may be resorted to :—Take a sheet of white paper, upon which place a red wafer ; look at it steadily with one eye for half a minute or so without allowing the eyelids to close, and then look from the red wafer to another part of the white paper, a green spectrum will be seen of the same size as the wafer, and this is the color which would form the true contrast to red. In like manner an orange wafer will produce a blue spectrum, and hence blue is the true contrast to orange, yellow to indigo, green to reddish violet, blue to orange-red, indigo to orange-yellow, and violet to bluish green. By a little attentive study it will be seen how easily any gardener might make himself acquainted with the principles of the science sufficiently to avoid gross errors in the composition of color in his flower-beds.

THE NATIONAL FAIR AT WASHINGTON.—We understand that many of the artists, manufacturers, and dealers, of this city, are preparing to send specimens, models, &c., to the great Fair, to be opened at Washington on the 20th inst. It may be well for them to bear in mind that Adams & Co., No. 16 Wall st., have excellent facilities for forwarding in the most safe, careful, and expeditious manner, goods, wares, and models of machinery, beween this city and Washington.

LOVE TO A MOTHER.—A little Irish boy, the son of a poor widow, once repeated to his teacher four chapters in the Testament. A kind gentleman who was present, was so much pleased, that he called him to him, and gave him his choice of a pair of blankets for his mother, or a suit of clothes for himself. Although he was dressed in tattered garments, and much needed a new suit, he did not hesitate to choose the blankets. The gentleman then gave him the clothes, too, as a reward for his kindness to his poor mother.

New Inventions.

WRIGHT'S BRIDGE.



EXPLANATION.—The principal peculiarity of this bridge consists in the mode of bracing or supporting the side frames, by a succession of arches. A A is the string piece, or sill, the ends of which are supposed to rest on abutments. B B, the plate, calculated to support a roof, if required. C C, posts tenoned into the sills and plates. These posts are moreover secured to the sills by iron straps and screw bolts. The arch-braces, O O, &c. are of square solid timber, slightly embedded or ganed into the posts. These side frames are to be duly supported, laterally, by beams and braces, with horizontel braces above and below. We have not yet seen a model of this bridge, but think it would be easily constructed, and answer well for spans of moderate length at least. Invented by Mr. C. D. Wright, of Hebron, Ct.

SCULPTURE, BY MACHINERY.—Mr. Thomas Blanchard, of Boston, has invented a machine for copying with great precision, all tangible substances in nature and art, and which executes statuary with consummate accuracy. The machine is of simple construction, but can be graduated to increase or diminish the copy, so as to furnish a colossal or a miniature figure in the proper proportions. Miniature busts of Daniel Webster, and other eminent men, have been taken from the originals, and they present perfect fac-similes. We have not seen this machine, nor any description of its construction, but conjecture that it consists of a drill, or instrument on the drill principle, working with a quick rotary motion, and governed in its vertical and lateral motion, by a parallel point, which is passed over the surface of the object to be copied. A plan has been for some time past matured, by an artist of this city, for carving wood-work on this principle, producing not merely a single copy, but twenty or more copies at the same time.

IMPROVEMENT IN IRON RAILS AND WHEELS.—A correspondent of the London Mining Journal proposes the introduction of round or swelled rail-surfaces and hollow or grooved wheel tires, to insure an extraordinary degree of safety in the railway traffic. This improvement evidently combines several advantages, one of which is, that any obstruction or misplaced rail, which would otherwise throw the engine from the track, would not be likely to displace the wheels from the opposite rail. It might render turn-outs and crossings more difficult of construction, but genius might find some method of evading any considerable inconvenience in this respect.

FITZGERALD'S SCREW PROPELLER.—We observe a description of this invention, with an illustration, in an exchange paper, in which its excellence is liberally set forth. It is even said to have been "fully proved to supersede all others !" Well, if it has, it needs neither recommendation nor public notice : but we can discover therein but little variation from the propeller, introduced by Mr. Beecher about eight years since, and by which we had the pleasure of travelling on the Farmington Canal, at the rate of *two miles per hour*. Mr. Beecher's plan proved a failure.

SCARE-FLY,—is the name given to a newly invented machine, for the advancement of the comfort, if not the luxury of life. It is constructed on the principle of clock-work, and gently waves a rod with a silk fringe appendage, over the face of a person reclining for repose. This invention is noticed in some of the Albany papers, and we presume the machines are for sale in that city.

NEW TOILET GLASS.—A new article, called the Victoria Toilet, has been introduced in England. It consists in part, of two sliding mirrors, which may be drawn out on each side of the ordinary front mirror, thus enabling the lady who sits at the toilet, to see in the glass before her, the reflected image of the back part of her head and dress.

HEAT OF THE EARTH.—A late scientific paper asserts that the temperature in an Artesian well at Neuffen, in the Kingdom of Wurtemburg, exhibits a more rapid increase of temperature in proportion to the depth than has hitherto been known in any other locality. In most of the Artesian wells, it has been found that the temperature increased about one degree for every 100 feet, but at Neuffen the increase has been one degree for every 33 feet. The depth of the well is 1250 feet, and the temperature of the bottom is about 104 degrees Farenheit. The nearest approach to this great exception from the normal state of things is at Monte Morin, at Tuscany ; and it is worthy of remark that at both places, the bottoms of the wells are 120 feet above the level of the sea. The writer thinks that the cause of the anomalies is the ancient heat of the ignited rocks, which being very slow conductors of heat, communicate but a very small portion of it to the surrounding strata ; or it would appear, that the crust of the earth is thinner at these places, and consequently that the approach to the internal surface is more rapid than at other places.

AMERICAN LOCOMOTIVES ABROAD.—There are twenty-two of Norris's Locomotive Engines finished and ready for the railroads in Austria ; and on the four roads extending from Berlin to Frankfort, Potsden, &c,. there are said to be twenty-six in operation. This is complimentary to the ingenuity and enterprise of American mechanics.

AN UNGALLANT LEGISLATURE.—It is reported in the Boston papers that four thousand of the fair operatives of Lowell have petitioned the Legislature to protect them against the unreasonable exactions of their employers, by establishing by law the numbers of hours which shall constitute a day's work ; but the unfeeling aristocrats only gave leave for the girls to withdraw their petition.

Foreign News.

The steamship Cambria, twelve days from Liverpool, arrived *on our shores*,—though not at Boston,—on Saturday night last. It was about 12 o'clock, the weather being foggy, the ship struck on the beach at Truro, about five miles from the highland light, Cape Cod. The engines were reversed, but all efforts to get her off proved unavailable. The passengers, about 80 in number, were safely landed on shore.

Affairs in Europe appear as Pacific as usual. Political prospects remain unchanged. Another bold attempt has been made to assassinate the "King of the French." He was returning from his drive in the Forest of Fontainbleau, with his family in the carriage, when he was fired at by a man seated upon the wall. Several balls struck inside the carriage, but fortunately no person was injured. The assassin was instantly arrested. His name is Laconate, an old general, and guardian of the forest.

MARKING TIME.—It is said that Mrs. Lillie, the royal nurse of Great Britain, who gets for her services about $1,200 per month, always manages to require similar assistance to that bestowed on her Royal mistress, about six weeks before her Majesty desires aid.

For the Scientific American.

MR. PORTER,—I take the liberty to propose to you a few questions on the form and attraction of the earth. I am taught that this planet is oblate, and gravity increases from the equator to the poles. But this involves a difficulty, which I beg leave to submit to your consideration.

1st. Does not the centrifugal force of its particles, caused by its diurnal revolution, combined with attraction, tend to produce a flattened or oblate form ?

2nd. Is not the earth sufficiently oblate to equalise these forces—or has it not the same form it would assume if fluid ?

3rd. If so, and it *is* in perfect equilibrium, does it not follow that the weight of a body is the same on all parts of its surface ? Or if it is *not* so flat as circumstances require, and weight is greater at the high latitudes,—what prevents the water of the ocean and the air from retreating from the poles, and by accumulating about the equator, produce an equilibrium ?

Kingston, Mass. T. D. S.

Our correspondent appears to have been taught an erroneous theory,—the reverse of the fact,—whoever may have been the author thereof. The weight or gravity of bodies at the surface of the earth, near the poles, instead of being a greater, are lighter than they would be near the equator ; and the heavier parts of the water of the ocean are prevented by centrifugal force, from obeying the influence of its superior gravity. The reason of the greater weight of bodies near the equator, is, that the attraction of gravity is more vertical, but less horizontal than at the poles. To illustrate this theory we will suppose the earth to be flattened like a wheel ; it is obvious that in this case the attraction of gravity on a body at the poles, would be only horizontal ; the body would have no tendency to descend, but would be held in equilibrium ; while on bodies at the equator, the entire influence of gravity being exerted in a vertical direction, they would be heavier than on the surface as at present. Thus it is clear that any additional oblateness in the earth would increase vertical gravity near the equator and diminish it near the poles. ED.

WELLMAN'S ILLUSTRATED BOTANY.—While the highest terms of commendation and praise have been lavished on merely ordinarily elegant periodicals, a writer finds himself at a loss for forms of expression whereby to represent *this* work in its true relative character. We can only say there has been nothing published in America that would compare in beauty with the May number of the "Illustrated Botany." The plates, four in number, and presenting nearly twenty varieties of choice flowers, are colored in the most brilliant style. The Crown Imperial Red Poppy, Sky Flowers, and Haw Thorn, are among this number. The work has already gained an extensive circulation, as it well deserves ; being decidedly cheap at $3 per annum. Published by J. K. Wellman, 116 Nassau st., N. Y.

SEAR'S NEW PICTORIAL MAGAZINE, for May, contains the best variety of subjects and the most beautiful engravings that we have seen in any preceding number. We observe in this number nearly twenty illustrations and embellishments. Several of them elegant pictures : and the reading matter consists of decicedly useful intelligence. Published monthly, in large and heavy numbers, at $2 per annum, by R. Sears, 128 Nassau st.

THE DIAMOND POINTED GOLD PENS.—The editor of the Germantown Telegraph may be assured that these pens are richly worth $400, each to any editor who has to furnish original matter for his paper : but feeling particularly partial to the "Telegraph" and its editor, we would transfer our old pen—as good as new, if not better—to him for $300. Good scientific mechanics may be supplied with these pens, however, for $4 each,—that is, each pen ; not each mechanic.

MARRIAGE AND DIVORCE IN PENNSYLVANIA.—About sixty divorces have recently been authorized by the Legislature of Pennsylvania. The cost to the parties is about $20 each ; which added to the ordinary cost of marriage, amounts to not far from $30 for tying and untying the matrimonial bands. Would it not be well for the same Legislators to regulate the prices according to the duration of the connexion of the parties. It seems very unjust to require as much pay for marrying and unmarrying a couple for a few days or weeks only, as from those who have enjoyed the conjugal felicity for several years.

MORE GOOD FORTUNE.—Mr. Ethan Standish, a driver of one of the stages between Boston and Plymouth, Mass., has a prospect of inheriting a considerable share of the immense property—said to furnish an income of $40,000 per annum—belonging to the heirs of the famous Miles Standish.

Thoughts on the Bible.

The Bible, independent of the blessed promises which it contains, independent of the mighty and valuable advice, which is to be found in its sacred pages, independent of the importance attached to it as a Divine revelation, is one of the most invaluable books in the world. In poetry it is unsurpassed, in wisdom unrivalled, in scientific research unexcelled, and in beauty and in depth of style unexceeded. In poetry it exceeds as far the boasted muse of a Milton or a Young, as the brilliancy of a noon day's sun does the faint glimmer of some distant planet, and, as in this latter case, the light which it possesses is borrowed from the sun, so in the former : what beauty belongs to these poets is borrowed from the Bible. It were worse than needless for me to pen a comparison between the immortal Psalmist, and the most gifted poet. The one will be admired, cherished, and reverenced, when the transient and flickering light of the other shall have been forever extinguished. We must not look in the Songs of David only, for true and living poetry—the whole Bible abounds with it. The cursory and transient observer will not discover this, but he only that gives himself over to this influence, and renders himself a willing "searcher of the Scriptures." It is not he that skims the surface of the sea that finds and lays hold of the hidden pearl, but he that dives deep, and searches long.

To form a just idea of the importance attached to the Bible, independent of its Divine origin, we would have to imagine the effects which the perusal of it would have upon an intellectual and cultivated mind, supposing the person never to have seen it. In the first place, he would find there revealed the great problem of the origin of man—his soul would be tranquilized with the truth of "life and immortality brought to light"—he would there find sufficient cause to explain the appearance of the immense beds of marine shells which are to be found in different parts of the world,—he would be charmed with the beauty of the style, and the sublimity of thought and conception, and his mind would find ample food for reflection, concerning the great truths therein contained, which, though they do not present themselves with the same force to us, simply because we have been accustomed to them from childhood, and appear to us as truisms, yet, to him they would appear as invaluable. He would then find Prophecy marked out in bold and indelible language, his mind would be filled with love for its Divine Author, and he would exclaim, in the fullness of his soul—"there is a God."—*B. J. Crew.*

AN HONEST PRAYER.—The following is said to be a verbatim copy of a prayer, found among the papers of an English miser, John Ward, of Hackney, M. P. It expresses the prayer of the heart, and is similar to the only prayer which a worldly-minded man can pray, whatever may be his religious hypocritical profession.

"Oh Lord, thou knowest that I have nine houses in the city of London, and likewise that I have lately purchased an estate in fee-simple, in the county of Essex ; I beseech thee to preserve the counties of Middlesex and Essex from fire and earthquakes ; and as I have a mortgage in Hertfordshire, I beg of thee likewise to have an eye of compassion on that county ; and for the rest of the counties thou mayest deal with them as thou art pleased ! Oh Lord, enable the bank to answer all their bills, and make all my debtors good men. Give a prosperous voyage and return to the Mermaid sloop, because I have insured it ; and as thou has said that the days of the wicked are but short, I trust in thee thou wilt not forget thy promise, as I have purchased an estate in reversion, which will be mine on the death of that most profligate young man, Sir J—— L——. Keep my friends from sinking, and preserve me from thieves and house-breakers, and make all my servants so honest and faithful, that they may attend to my interests and never cheat me out of my property night or day."

LIST OF LETTERS

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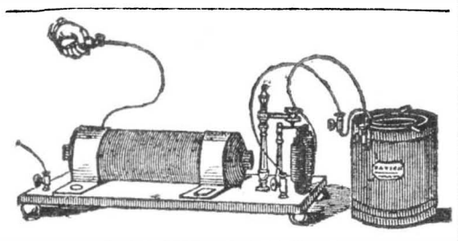

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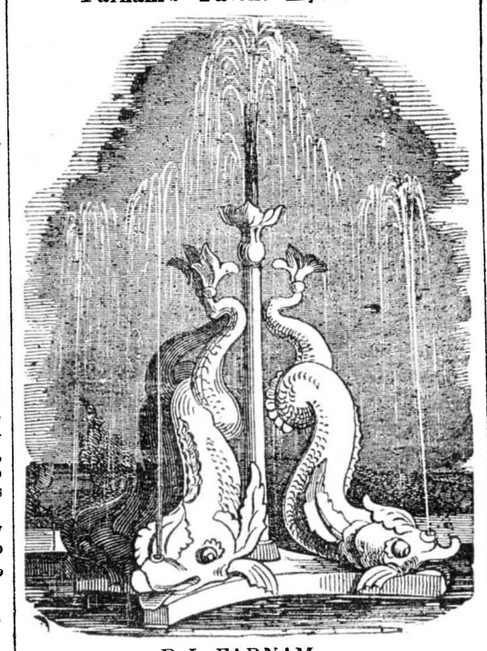

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Name-Stamps for Blacksmiths, Stone Cutters, Carpenters and machinists, steel letters and figures of all sizes constantly on hand for marking iron, steel, brass and wood; Notary seals, desk seals, door plates made and engraved; artificial flower stamps, vainers and loofers made at the shortest notice and on most reasonable terms feb11.

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N.B.—All letters directed, post-paid, to S. B. MERKEL, Founder-machinist, millwright, draughtsman and Engineer, Philadelphia. Pa. feb11.

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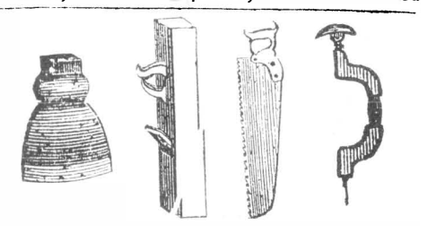
Roast Turkey,	18d	Boiled Ham,	6d
" Goose,	18d	Pork and Beans,	6d
" Chicken,	18d	Veal Pie,	6d
" Duck,	18d	Beef Steak Pie,	6d
" Beef,	6d	Chicken Pie,	12d
" Pork,	6d	Mush and Milk,	6d
" Veal,	6d	Rice and Milk,	6d
" Lamb,	6d	Lamb Pot Pie,	6d
" Pig,	12d	Fried Fish,	6d
Boiled Chicken,	12d	Fried Clams,	6d
" Mutton,	6d	Ham and Eggs,	12d
" Corned Beef,	6d	Chicken Soup,	6d
" Pork,	6d	Beef Soup,	6d
" Fish,	6d	Coffee,	6d

Dessert.

Suet Pudding	6d	Mince Pie,	6d
Indian Pudding,	6d	Apple Pie,	6d
Rice Pudding,	6d	Peach Pie,	6d
Plum Pudding,	6d	lum Pie,	6d
Bread Pudding,	6d	u mpkin Pie,	6d
Apple Dumplings,	6d	Custard Pie,	6d

Breakfast and Tea.

Beef Steak,	6d	Hot Corn Bread,	6d
Veal Pie,	6d	Indian Cakes,	6d
Mutton Chops,	6d	Boiled Eggs,	6d
Ham and Eggs,	12d	Fried Eggs,	6d
Fried Tripe,	6d	Toast,	6d
Fried Sausages,	6d	Hot Muffins,	6d
Fried Fish,	6d	Hot Rolls,	6d
Fried Clams,	6d	Tea,	3d
Fried Liver,	6d	Coffee,	3d



AT HENRY ROWNTREE'S old established *Tool Store*, at the Corner of Chambers and Chatham streets, Mechanics, Farmers, &c., will find an assortment of good Tools, suitable for almost every branch of trade.

H. R. feels obliged to his many customers, of every class, for their past patronage and hereby assures them that no pains shall be spared to procure the best articles in all variety.

H. R. has a greater part of his goods made expressly for him, and Mechanics, &c., may place confidence in them, having had the gold medal awarded him, at the late Fair, for the best tools.

First rate Razors; Pen and Pocket Knives; Table Knives and Forks, &c.

☞ Remember, at the corner of Chambers and Chatham streets. dec26

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Worrall's warranted cast steel saws.
Hoe & Co.'s do. do. do.
Cabinet Trimmings. Tin and wooden ware.
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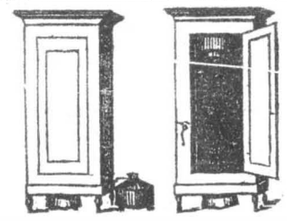
Agricultural tools. Patent Safety Fuse for blasting.
Sole Agents, for this city, for J. A. Fay's patent Mortising Machine.

THE INVISIBLE DOOR SPRING.

W. N. S. & Co. have taken the exclusive agency, for this city, of Ellis's Invisible Door Spring, which commands a ready preference over all others, and has made arrangements to have them put on and adjusted to the doors of those who may require them; Mr. Shaffer, 75 Warren st, is engaged to superintend this department, and will promptly attend to all orders in this line.

Dec. 25.



Locke's Portable Shower Bath.

THE subscriber has the satisfaction to announce to the public, that he has perfected, and is prepared to furnish at short notice, a portable shower-bath, far superior in utility and convenience of management, to anything of the kind hitherto offered. It constitutes a light and genteel article of furniture for a bed-chamber, and so perfectly constructed, that either a lady or gentleman can at any moment enjoy a copious shower without the id of servants, and withodt haviug a drop of the water sprinkled on the carpet or floor. And by a slight change in a part of the apparatus, the same may be converted to a steam-bath, either plain or aromatic. These baths are manufactured and may be examined at No. 31 Ann st.

JOHN LOCKE.

Dec 4.

ILLUSTRATED BOTANY.

Edited by JOHN B. NEWMAN, M. D.

Circumstances make the man, and very often, as in the present case, the book. For years there has been a steadily increasing interest felt for the vegetable kingdom. Latterly this taste has been partially gratified by the litera rymagazines, which owe their popularity, in a great measure to the beautiful flower prints that adorn them. One specimen a month, however, is not enough, nor is it required in such connection. A work relating exclusively to the subject, is wanted by the public, and this want, the present enterprise is intended to supply.

Preceded by a short introduction on Physiology, and a view of the Natural and Linnæan Systems, the work will be devoted to a separate consideration of each plant.—Together with our own information, we shall draw on the standard works on Chemistry, Botany, and Medicine, combining every useful item of knowledge, and without lessening its value, present it in a concise and pleasing form. Obtaining our supplies from the same sources as the bee, we hope to *secrete* as elegant a sweet for the mind, as it does for the body. The properties of each, more especially the medicinal, will be confirmed, in a great number of instances, by personal experience. To this will be added its history; its meaning in the language of flowers; and poetry, either original or selected from the gems of the children of song.

The whole illustrated by splendid colored engravings, taken from nature. full size, and finished in the highest style of modern art.

This work is designed to be eminently popular in its application, and there is enough of that which is stronger than fiction about it, to render it, in no ordinary degree, interesting and instructive.

Terms.—This work will be published monthly, with four or six flowers, handsomely painted, in each number. Price three dollars a year, or two copies sent to one address for five dollars. A *very* liberal discount allowed to agents.

J. K. WELLMAN,

Publisher and proprietor, 118 Nassau st.

*** Furnished to Seminaries, Colleges, and societies, in clubs, 10 copies for $20 a-year.

PARTICULAR NOTICE.

We do not intend to confine ourselves to the botanical descriptions of each plant, but on the contrary, divested of technicality, intend to make it a thoroughly scientific work, in all the departments of Botany. It will also give information on the cultivation of Plants and Flowers. In a word, it will comprise the whole science.

We give below the *free* opinions of the press.

From the N.Y. Tribune.

"ILLUSTRATED BOTANY."—This is a new candidate for popular favor, in the shape of a monthly periodical. The first two numbers are before us, and if they may be regarded as speeimens of those which are to follow, the work will certainly prove highly attractive. It is to be devoted to a separate consideration of each plant in the vegetable kingdom, the whole illustrated by colored engravings, taken from nature, full size, and finished in the highest style of modern art. Four or six of these engravings will be given in each number. Those in the numbers already issued are of the most beautiful and splendid description. The Editor will draw on the standard works on chemistry, botany, and medicine, and thus combine in a brief form every useful item of knowledge respecting plants and flowers, their medicinal qualities, &c. To this will be added their history and their meaning in the "language of flowers." To all lovers of the beautiful in Nature and Art, we commend this work as eminently worthy of patronage.

From the Christian Advocate and Journal, (Edited by T. E. Bond, M. D,)

The painted specimens are really exquisitely done; and the great marvel with us is, how the work can be afforded at the low price of three dollars per annum, or two copies to an address for five dollars. Engravings can be cheaply multiplied, but paintings must be executed separately, and without the aid of labor-saving machinery. It will give us real pleasure to announce the successive numbers of this beautiful periodical, as we have been led to think the study of Botany not only as an innocent recreation, but eminently promotive of piety.

From the N. Y. Surgical and Medical Reporter.

We have received the first number of "The Illustrated Botany." This periodical is got up in a very neat form, and displays taste and judgment in its Editor, who, being a well educated medical man, is prepared to make a work of this kind very interesting and useful to the general reader. The colored plates are unsurpassed in beauty and finish.

From the Protestant Churchman (N.Y.)

ILLUSTRATED BOTANY.—The design of this work is admirable. It is intended to comprise scientific descriptions of the most valuable native and exotic plants, with their history, medicinal properties, &c. &c.

N. B. Publishers of newspapers who give the above prospectus three insertions, shall receive the work one year. march 26.

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